

REMARKS

In order to expedite the prosecution of the present application and attempt to arrive at a consensus at allowable subject matter, Applicants have presented Claims 22-24 which are directed to methods of attenuating breaking waves with the submerged breakwater generating structures of Claims 12, 13 and 16 respectively. Favorable consideration is respectfully solicited.

Claims 13, 14 and 16-18 have been rejected under 35 USC 102(b) as being anticipated by Umeda. Claims 12, 6 and 7 have been rejected under 35 USC 103(a) as being unpatentable over Umeda in view of Michishita. Claims 15, 20 and 21 have been rejected under 35 USC 103(a) as being unpatentable over Umeda in view of Lenson. Claim 19 has been rejected under 35 USC 103(a) as being unpatentable over Umeda in view of Michishita. Applicants respectfully traverse these grounds of rejection and urge reconsideration in light of the following comments.

At the outset, Applicants wish to point out that the word "submerged" means covered or overflowed with water or put under water. The Examiner's comment regarding the majority of the breakwaters disclosed by Umeda and Michishita being submerged is not well founded. Applicants are not claiming a "partially submerged" or "immersed" breakwater structure. The present claims are directed to a "submerged" breakwater structure and, even though reasonable people may differ as to whether this limitation in the preamble limits the claimed subject matter, there is no reasonable debate as to what is meant when a breakwater structure is disclosed as being submerged. Although claims are given their broadest possible interpretation during examination, the Examiner cannot ignore the plain meaning of words used in describing the claimed invention and give new definitions to the words in order to further a rejection.

As stated previously, the instant invention is directed to a submerged breakwater generating structure which is smaller than conventional breakwater generating structures, can be constructed at a lower cost and yet still possesses a high breakwater producing efficiency. In the breakwater structure of the present invention, wave energy is reduced by the submerged structure through the production of a breaking wave which is introduced into slanted grids and returned offshore from an opening. The breaking wave is caused by a sudden change of the depth of the seawater.

Three different embodiments of the submerged breakwater generating structure are covered by the present claims. In the first embodiment, the submerged breakwater generating structure comprises a reef having slits provided at an upper portion thereof and a vertical wall defining the reef at an offshore side thereof. The vertical wall has at least one opening at a lower end thereof and the reef is formed as two stages and placed on a mound, a through path being provided from the reef to a coastal side of the breakwater generating structure and an opening end of the through path being provided to a base of the mound.

In a second embodiment of the present invention, the submerged breakwater generating structure comprises an open box having a vertical wall for producing a breakwater at an off-shore side, the vertical wall having at least one opening at a lower end and inclined slits with respect to the direction along which waves propagate disposed at the top portion of the box.

In a third embodiment of the present invention, the submerged breakwater generating structure comprises an open box having a vertical wall for producing a breakwater at an offshore side, and inclined slits with respect to the direction along which waves propagate disposed at the top portion of the box. The vertical wall has at least one

opening at a lower end thereof and the box is formed as two stages and placed on a mound. It is respectfully submitted that the prior art cited by the Examiner does not disclose the structure of the presently claimed invention.

The Examiner states that the Umeda reference discloses a breakwater structure comprising an open box 10 having a vertical wall 14 for producing a breakwater at an offshore side, wherein the vertical wall has openings 24 at a lower end and inclined slits 32 with respect to the direction along which waves propagate disposed at a top portion of the box. Applicants disagree with this characterization of the Umeda reference.

Looking at Figures 1 and 6 of the Umeda et al reference, it is readily apparent that the openings 24 provided in vertical wall 14 are not at a lower portion thereof. At best, the openings are provided at a central portion thereof. Additionally, Claim 13 requires that the inclined slits be provided at a top portion of the box and be inclined with respect to the direction along which waves propagate. The slits 30 are not provided in a top portion of the structure of Umeda and are inclined in a direction opposite to the direction along which waves propagate. As such, Claim 13 clearly is patentably distinguishable over the Umeda reference.

Claim 16 requires that the structure comprise an open box having a vertical wall having at least one opening at a lower end thereof, inclined slits with respect to the direction along which waves propagate disposed at the top portion of the box and the box be formed as two stages and placed on a mound. The discussion with respect to the opening at a lower end of the vertical wall and the inclined slits at the top portion of the box was made in the paragraph directly above. Additionally, the mound 58 of Umeda cannot be counted at a stage as Claim 16 requires that the box is formed as two

stages and then placed on a mound. Therefore, the mound 58 of Umeda cannot be considered a stage.

The Michishita reference has been cited by the Examiner as disclosing a breakwater structure 1 having a through path 18 provided therein right through to the base of a mound, as shown in Figure 5 of this reference. However, the pertinent claims require that a through path be provided from the reef to a coastal side of the breakwater generating structure and an opening end of the through path being provided to a base of the mound. The pipe or conduit 18 shown in Figure 5 has a discharge opening end provided far away from the base of the mound 8. Since the present claims require that the discharge open end be provided at the base of a mound and not at some distance far therefrom, it is respectfully submitted that the Michishita reference does not disclose what is asserted by the Examiner.

The Lenson reference has been cited by the Examiner as disclosing a breakwater structure supported by legs and having a height of the coastal side of the box higher than the vertical wall such that the slits in the structure become higher toward the coastal side. Although the only structures which Applicants think that can be classified as a slit are current passages 36 and 38, the Lenson reference clearly does not cure the deficiencies contained in the primary Umeda reference and, therefore, the combination of these references do not present a showing of prima facie obviousness under 35 USC 103.

As pointed out above, notwithstanding the "submerged" limitation, the structure of the breakwater devices shown in the references cited by the Examiner simply do not show or suggest the structure of the presently claimed invention. As such, Applicants respectfully submit that the presently claimed invention clearly is patentably distinguishable over the prior art cited by the Examiner. Reconsideration of the

present application and the passing of it to issue is respectfully solicited.

Respectfully submitted,


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